JOINT PROGRAM ON THE SCIENCE AND POLICY OF GLOBAL CHANGE

The MIT Joint Program on the Science and Policy of Global Change (*http://globalchange.mit.edu*) is working to advance a sustainable, prosperous world through scientific analysis of the complex interactions among co-evolving, interconnected global systems. To help nations, regions, cities, and the public and private sectors confront critical challenges in future food, water, energy, climate, and other areas, the MIT Joint Program's integrated team of natural and social scientists produces comprehensive global and regional change projections under different environmental, economic, and policy scenarios. These projections help decision-makers to assess impacts, and the associated costs and benefits of potential courses of action.

The Center for Global Change Science (*https://catalog.mit.edu/mit/research/center-global-change-science*) is the parent organization of the Joint Program. Most of the program's affiliated faculty and research staff are drawn from the School of Science, MIT Energy Initiative, Institute for Data, Systems, and Society, School of Engineering, the MIT Sloan School of Management, School of Architecture and Planning, and SHASS. Cooperative efforts engage the Joint Program with leading research institutions and nonprofit organizations worldwide. Financial support is provided by an international partnership of government, industry and foundation sponsors, and by private donations.

At the heart of the Joint Program's work lies the MIT Integrated Global System Modeling (IGSM) framework. Designed to analyze interactions between human society and the Earth system, this comprehensive set of models is used to study the causes, consequences, and solutions to problems that arise from global change, and consider the unintended impacts of global economic and population growth on natural resource availability, the climate, and air and water quality. The IGSM framework consists primarily of two interacting components: the Economic Projection and Policy Analysis (EPPA) model and the MIT Earth System Model (MESM). Together they are used to evaluate probabilities, uncertainties, risk, and costs and benefits—information crucial to policy decision-making.

Joint Program members communicate research results and interpret policy relevance of analytical work through many professional activities, including publications, workshops, corporate and public briefings, and media interviews. Special briefings from program members have been requested by the US Congress and federal and state agencies, by governmental ministries and international organizations, and by independent research panels. Research findings are also communicated through the MIT Global Change Forum, which brings together representatives of industry, government, international entities, and research groups for analysis and discussion of science and policy aspects of global change, and for independent assessment of studies and policy proposals.

The Joint Program offers opportunities for undergraduates and graduate students to get involved in research through Undergraduate Research Opportunities Program and research assistantships.

Noelle Selin, director of the Center for Global Change Science and professor within the Institute for Data, Systems, and Society and the Department of Earth, Atmospheric, and Planetary Sciences, oversees the program. For further information, contact the Joint Program office (*globalchange@mit.edu*), 617-253-7492.